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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,462	04/20/2006	Louis Brissot	4590-491	7174
33308 7590 03/09/2009 LOWE HAUPTMAN & BERNER, LLP 1700 DIAGONAL ROAD, SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER PARKER, AUTUMN H				
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MAIL DATE 03/09/2009		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,462

Applicant(s)

BRISSET ET AL.

Examiner

AUTUMN PARKER

Art Unit

2862

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-850)
- _____ Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- _____ Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Claims 10-13 have been amended. No new claims have been added and no additional claims have been cancelled.

Response to Arguments

2. Applicant's arguments filed 31 December 2008 have been fully considered but they are not persuasive. Regarding Claim 10, Applicant argues that Hall fails to teach that the entry pupils each observe a distinct portion of the object field. Applicant likens this to a 50 degree field of view where each pupil observes two distinct areas of 25 degrees each. While Hall does not teach such a scenario, Hall does specifically teach that the camera is a stereoscopic camera. As such, each entry pupil must observe a distinct portion of the object field while also overlapping in scope.

A similar analogy would be to look at an object field with your eyes. Closing one eye removes a portion of the field from view. Similarly, opening the first eye and closing the second removes a portion for the field of view on the opposite side. Each opening (whether eye or entry pupil in the Hall reference) must observe a portion that is otherwise unavailable to the other opening. Any to openings that are separated by a distance (such as Hall, for example) will necessarily achieve this effect.

Further, the limitation put forth in Claim 11 renders the example given by Applicant as physically impossible. The field of view cannot be split into two separate, distinct fields in Claim 10, and then suddenly overlap in part as in Claim 11.

3. Claims 11-12, 14-15 and 17-18 depend from Claim 10 and are rejected for at least the reasons discussed supra.

4. Regarding Claim 13, Applicant argues that Igel does not teach placing the signal processing means in the spaces between sensors on the substrate. As discussed in the prior Office Action, Igel teaches that signal processing means may be placed advantageously in relation to the sensor substrate. The Igel reference merely teaches that it is obvious to place a signal processing device in an advantageous location, such as in spaces formed on substrates.

5. Applicant's arguments, see page 5, filed 31 December 2008, with respect to the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn.

Claim Objections

6. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. As written, Claim 18 is identical to the last limitation previously claimed in independent Claim 10.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. Claim 10 recites the limitation "each said entry pupil for observing a distinct part" in line 6 of the claim, while Claim 11 recites the limitation "the various parts of the object field partially overlap" in line 2 of the claim. These limitations are mutually contradictory and there is insufficient antecedent basis for both limitations simultaneously.

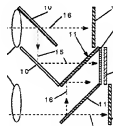
Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 10-12, 14 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall, U.S. Patent No. 5,692,226 (hereafter referred to as 'Hall').
12. Regarding Claims 10 and 18, Hall discloses an image pickup device comprising:
- a sensor (Fig. 5, [12]);
 - an optical means (Fig. 5, [10, 11]) through which the device receives light radiation in an object field and directs it toward the sensor;



- wherein the optical means comprise:
 - o at least one mirror (Fig. 5, [10, 11]);
 - o a plurality of entry pupils (Fig. 5, [9]), each said entry pupil for observing a distinct part of the object field;
 - o wherein the light radiation to be observed by each said pupil is directed toward a separated part of the sensor by the optical means (col. 5, lines 57-64).
13. Regarding Claim 11, Hall discloses the various parts of the object field partially overlap (col. 5, lines 38-56).
14. Regarding Claims 12 and 14, Hall discloses each part of the object field is associated with a useful part of an image plane formed on the sensor by the optical means, the various useful parts are separated by a space, and the entry pupils have a geometry similar to that of the useful parts (Figs. 4a and 4b).
15. Regarding Claim 17, Hall discloses the optical means comprise at least two mirrors associated with each part of the object field (Fig. 5, [10, 11]).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

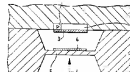
17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Igel et al., U.S. Patent No. 6,370,960 (hereafter referred to as 'Igel').

20. Regarding Claim 13, Hall teaches the invention as claimed above. Hall does not teach the details of the image sensor, including the substrate and signal processing means. Igel, for example, teaches that signal processing means may be positioned advantageously within the sensor substrate itself (Fig. 1). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have condensed the signal processing means within the



spaces in the sensor substrate, as taught by Igel, in the invention as taught by Hall, for the purpose of maximizing the efficient use of space in order to miniaturize the component.

21. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Sugawara, Pub. No. US 2001/0015847 (hereafter referred to as 'Sugawara').

22. Regarding Claim 15, Hall teaches the invention as claimed above. Hall does not teach that the optical means comprises at least one element with negative optical power. Sugawara, for example, teaches that negative lenses are known to be used in imaging systems (Fig. 1), particularly those with multiple pupil entry apertures. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have included a negative lens, such as the one taught by Sugawara, in the invention taught by Hall, for the purpose of changing the focal length so as to maximize the efficient use of space.

Allowable Subject Matter

23. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: Claim 16 recites a limitation for the formation of the optical means, including at least one mirror and a plurality of pupil entry means, as a single transparent piece. The prior art of record teaches these components as separate pieces and there is no

indication of a means or desire to make them in one continuous piece. As such, Claim 16 would be allowable over the prior art, including all of the limitations of the parent claim.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AUTUMN PARKER whose telephone number is (571)270-3916. The examiner can normally be reached on Mon-Thurs, 8:00 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP
26 Feb 2009

/Melissa J Koval/
for Patrick J. Assouad, Examiner of Art Unit 2862